Amendments to the Claims

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Currently Amended) A phase locked ~~loop~~ loop, comprising:

reference oscillator means for generating a low phase noise reference frequency signal;

a voltage controlled oscillator ~~(VCO)~~ for producing a desired output frequency signal;

a phase detector for comparing ~~the~~ a phase of the low phase noise reference frequency signal to the ~~divided down VCO~~ desired output frequency signal; and

a loop filter for suppressing components of the low phase noise reference frequency ~~components and integrating~~ signal.

35. (Currently Amended) The phase locked loop of claim 34, further comprising a programmable divider for dividing ~~down~~ the ~~VCO~~ desired output frequency signal.

36. (Currently Amended) A frequency ~~synthesizer~~ synthesizer, comprising:

~~an~~ oscillator means for generating a substantially stable differential reference signal;

a ~~divide by integer~~ first divide-by-integer counter for dividing ~~the~~ a frequency generated in the oscillator means down to a first known lower value;

a voltage controlled oscillator for generating a desired output frequency in response to an applied substantially DC voltage;

a ~~divide by integer~~ second divide-by-integer counter for dividing the desired output frequency down to a second known lesser value;

a phase detector for comparing the ~~divided down reference~~ frequency at the first known value to the ~~divided down~~ desired output frequency at the second known value, whereby an error voltage proportional to ~~the~~ a difference in phase and frequency is produced; and

a low pass filter for converting the error voltage to a DC error voltage.

37. (Currently Amended) A CATV ~~tuner~~ tuner, comprising:

~~a substrate upon which a substantial portion of the tuner circuitry is disposed, and having an RF input connection and an intermediate frequency output connection;~~

~~a~~ reference oscillator means for providing a substantially stable low noise, differential clock signal;

a phase locked loop using the substantially stable low noise, differential ~~low noise reference oscillator~~ clock signal as a frequency reference to produce a local oscillator signal;

a filter, coupled to an output of the CATV tuner, to selectively remove spurious frequency components at least one of created in the CATV tuner ~~or~~ and received from an external source~~, and undesired to be present at the output of the tuner~~; and

a mixer that utilizes ~~a~~ the local oscillator signal to produce an intermediate frequency ~~that is more easily processed by subsequent circuitry~~.

38. (Currently Amended) A television set top ~~box~~ box, comprising;

a transceiver for receiving ~~programming~~ a program and ordering ~~services~~ a service;

~~an~~ oscillator means ~~to provide~~ for providing a reference frequency that is used in ~~the~~ frequency conversion of a received signal corresponding to the program;

a decryption circuit ~~allowing~~ that allows ~~premium programming~~ the program to be received and descrambled ~~such~~ so that ~~it~~ the program is viewable; and

~~a memory to store information; and~~

a decoder to produce an audio and video signal corresponding to the program.

39. (Currently Amended) A television receiver, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an~~ oscillator means ~~to provide~~ for providing a reference signal in the television receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal ~~to be performed~~;

audio signal processing means for processing the incoming television signal ~~such~~ so that ~~it~~ the incoming television signal ~~may be~~ is capable of being heard;

video signal processing means for ~~producing~~ processing the incoming television ~~signals~~ signal so that ~~create~~ an image from the incoming television signal is capable of being displayed ~~on a display device~~; and

a display device that is capable of reproducing ~~an~~ the image ~~that is contained in the transmitted incoming television signal~~.

40. (Currently Amended) A ~~VCR~~ VCR, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an~~ oscillator means ~~to provide~~ for providing a reference signal in ~~the~~ a receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal ~~to be performed~~;

audio signal processing means, disposed within a signal path, for processing the incoming television signal ~~such~~ so that ~~it~~ the incoming television signal ~~may be~~ is capable of being heard;

video signal processing means, disposed within the signal path, for ~~producing~~ processing the incoming television ~~signals~~ signal so that ~~create~~ an image from the incoming television signal is capable of being displayed ~~on a display device~~;

~~a memory for storing a instructions;~~

a recording and ~~play back~~ playback unit that allows the VCR to play and record information stored on a recording ~~media~~ medium; and

a signal switching unit for connecting the recording and playback unit in and out of the signal path.

41. (Currently Amended) A cable ~~modem~~ modem, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an~~ oscillator means ~~to provide~~ for providing a reference signal in ~~the~~ a receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal ~~to be performed~~;

an Ethernet transceiver for connecting ~~the~~ a cable television network to ~~the~~ an Ethernet, the cable television network capable of conveying the incoming television signal;

a ~~diplexer~~ duplex filter that allows full duplex communication over the ~~CATV~~ cable television ~~network.~~ network;

a modulator for encoding data for upstream transmission to the cable television network;

a demodulator for decoding ~~downstream~~ data received from the cable television network.

This listing of claims will replace all prior versions, and listings of claims in the application.